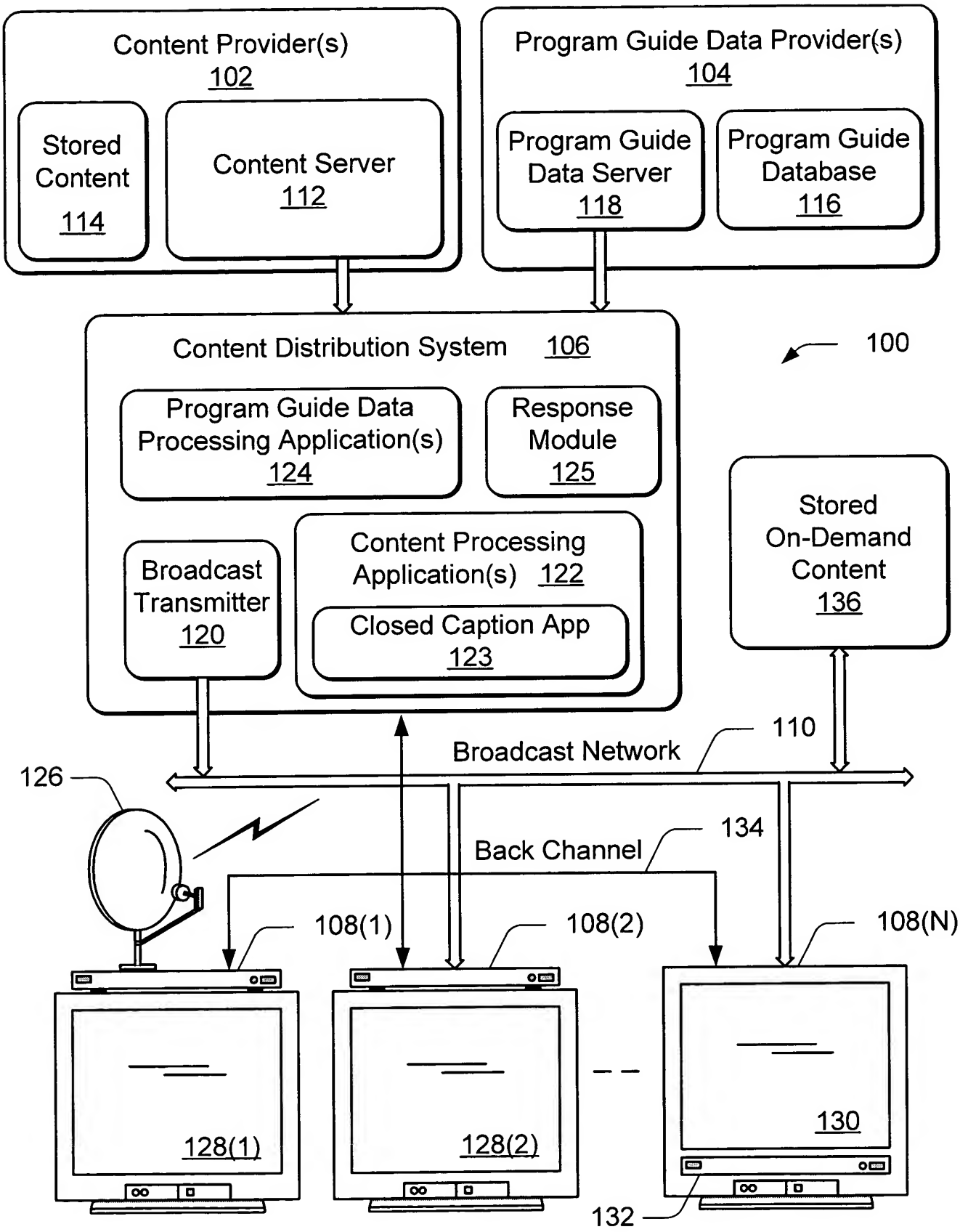

Content Provider(s)
102
Stored Content
114
Content Server
112
Program Guide Data Provider(s)
104
Program Guide Data Server
118
Program Guide Database
116
Content Distribution System
106
100
Program Guide Data Processing Application(s)
124
Response Module
125
Broadcast Transmitter
120
Content Processing Application(s)
122
Closed Caption App
123
Stored On-Demand Content
136
110
Broadcast Network
126
134
Back Channel
108(1)
108(2)
108(N)
128(1)
128(2)
130
132

Fig. 1

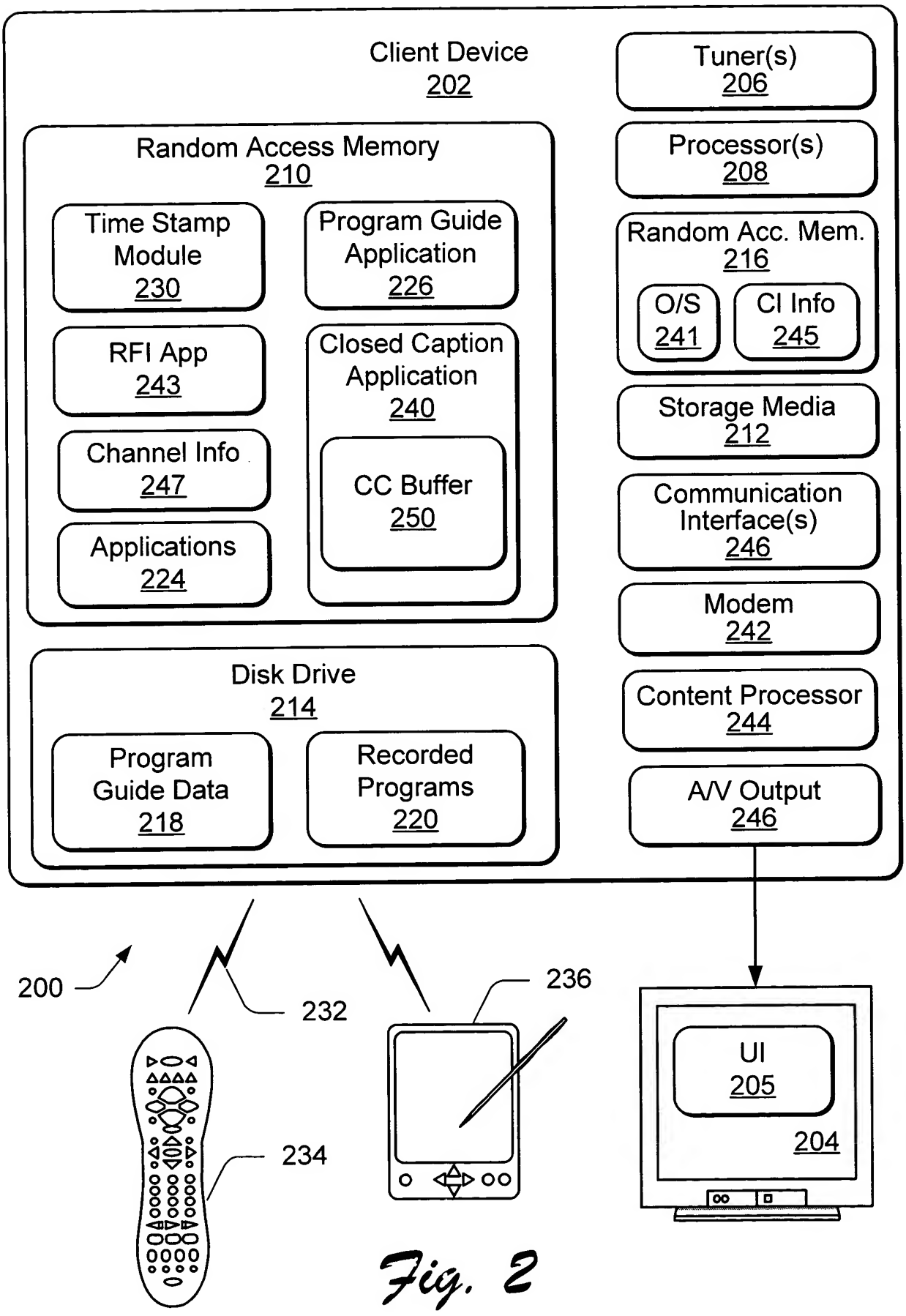

Client Device
202
Tuner(s)
206
Random Access Memory
210
Processor(s)
208
Time Stamp Module
230
Program Guide Application
226
Random Acc. Mem.
216
O/S
241
CI Info
245
RFI App
243
Closed Caption Application
240
Storage Media
212
Channel Info
247
CC Buffer
250
Communication Interface(s)
246
Applications
224
Modem
242
Disk Drive
214
Content Processor
244
Program Guide Data
218
Recorded Programs
220
A/V Output
246
200
232
236
UI
205
204
234

Fig. 2

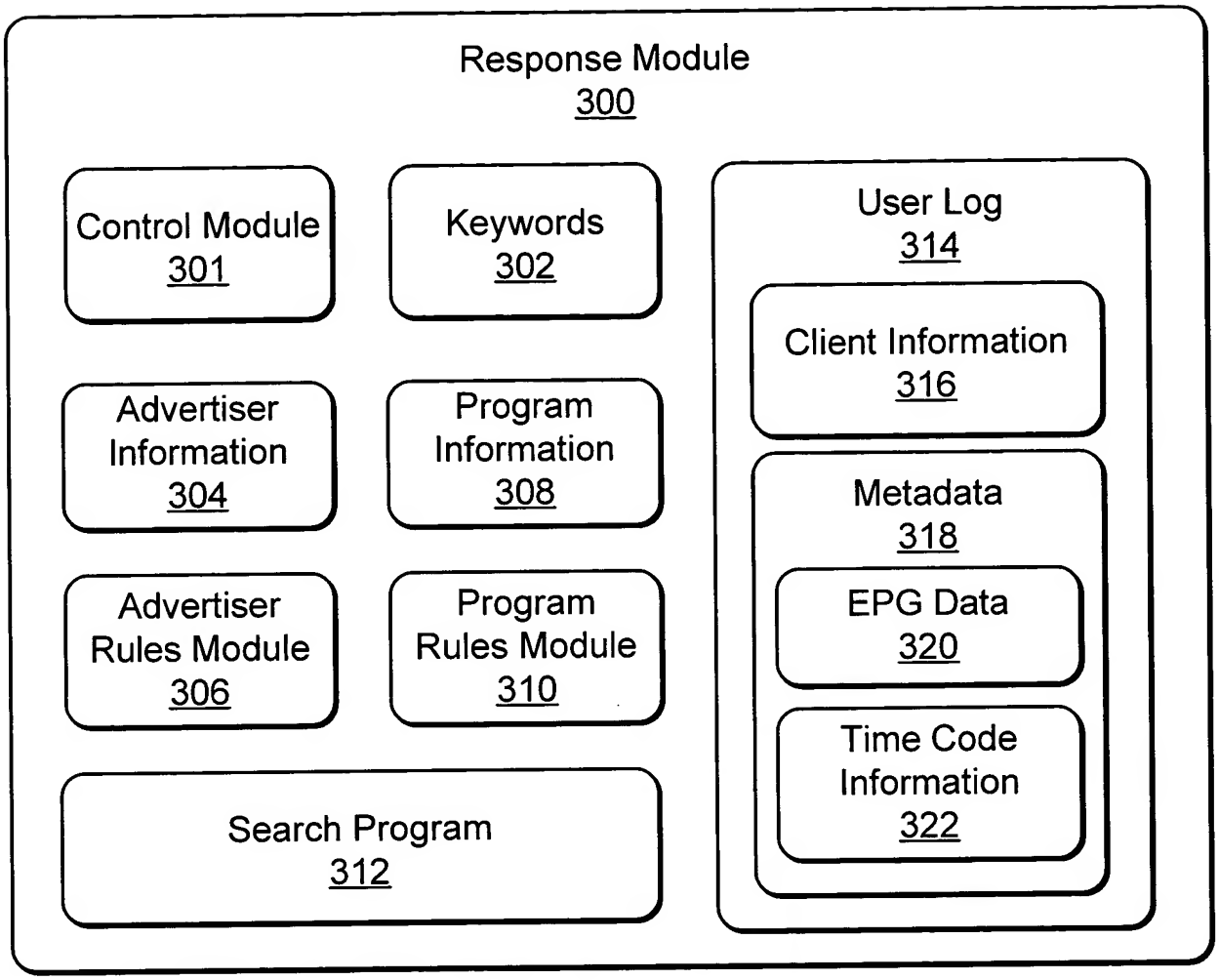

Response Module
300
Control Module
301
Keywords
302
User Log
314
Client Information
316
Advertiser
Information
304
Program
Information
308
Metadata
318
EPG Data
320
Advertiser
Rules Module
306
Program
Rules Module
310
Time Code
Information
322
Search Program
312

Fig. 3

| Program Rules Module 400 | | |
|---|---|---|
| Program 402 | Action 404 | Deliv. Mode 406 |
| 124396 | Send Related Content Schedule | System Message |
| 337525 | Send Program Website Address | E-mail |
| 993743 | Send Coupon For DVD/ Video Purchase | Post |
| 241998 (music video) | Send Details: Production Details, Lyrics, etc. | System Message |

408(1) 408(2) 408(3) 408(n)

Fig. 4a

| Advertiser Rules Module 410 | | |
|---|---|---|
| Advertiser 412 | Action 414 | Deliv. Mode 416 |
| Advertiser X | Send Product/Availability Information | System Message |
| Advertiser Y | Send Product Coupon | Post |
| Advertiser Z (Program Promo) | Send Schedule of Broadcast TImes | E-mail |
| Advertiser A | Send Product Website Address | System Message |

418(1) 418(2) 418(3) 418(n)

Fig. 4b

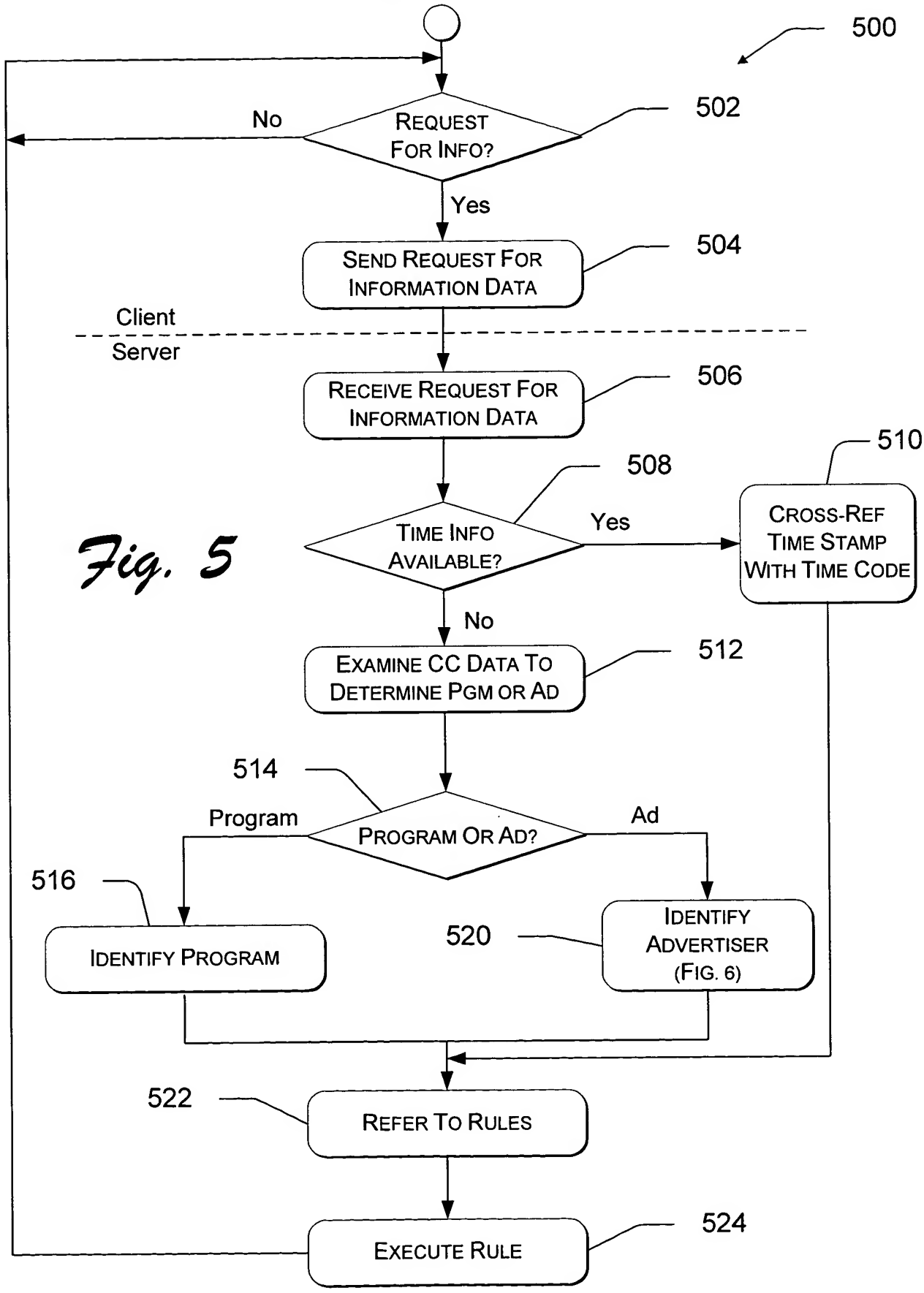
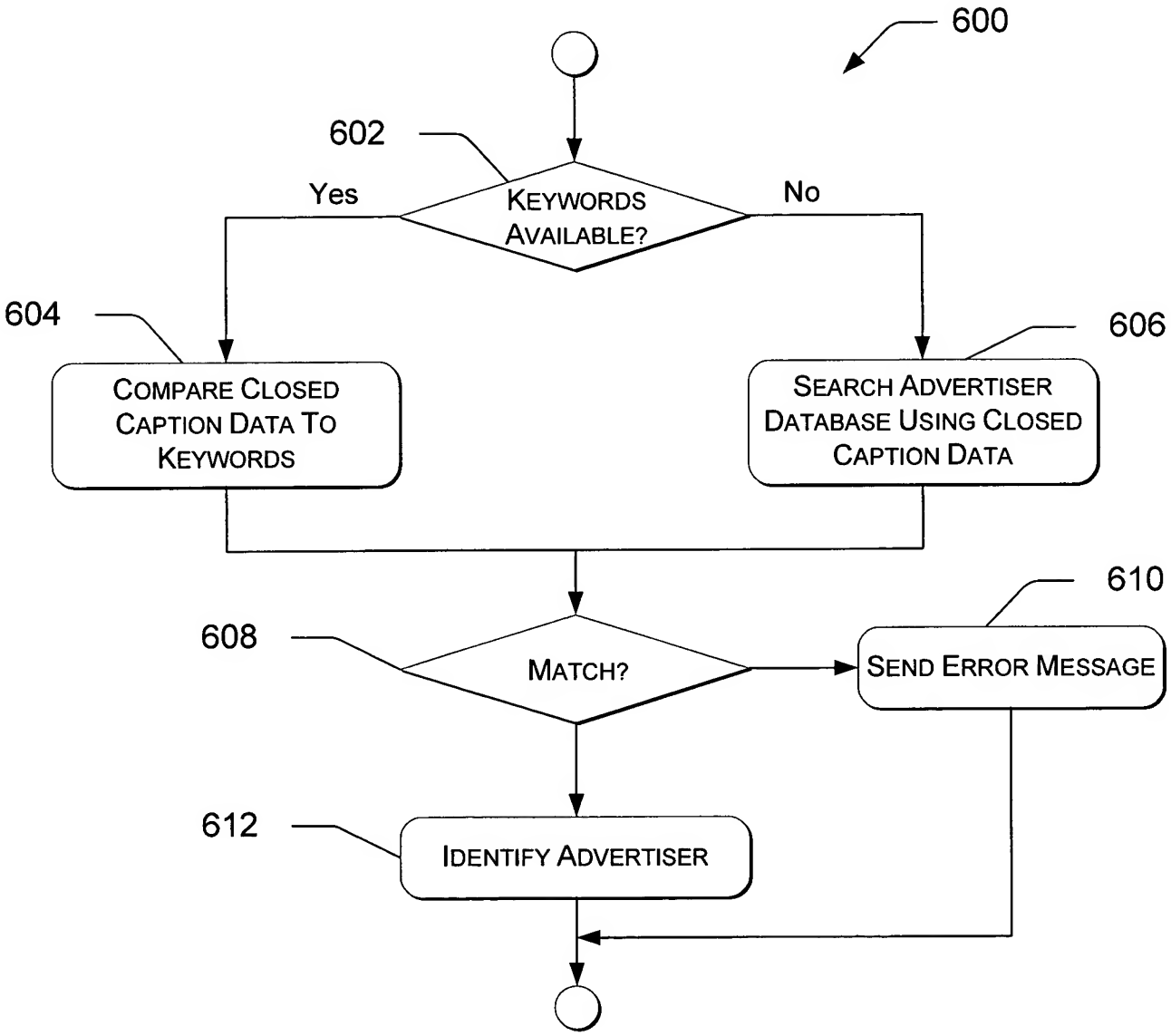

500
REQUEST FOR INFO?
No
502
Yes
SEND REQUEST FOR INFORMATION DATA
504
Client
Server
RECEIVE REQUEST FOR INFORMATION DATA
506
508
TIME INFO AVAILABLE?
Yes
510
CROSS-REF TIME STAMP WITH TIME CODE
No
EXAMINE CC DATA TO DETERMINE PGM OR AD
512
514
PROGRAM OR AD?
Program
Ad
516
IDENTIFY PROGRAM
520
IDENTIFY ADVERTISER (FIG. 6)
522
REFER TO RULES
EXECUTE RULE
524

Fig. 5




Identify Advertiser
(Fig. 5)

*Fig. 6*

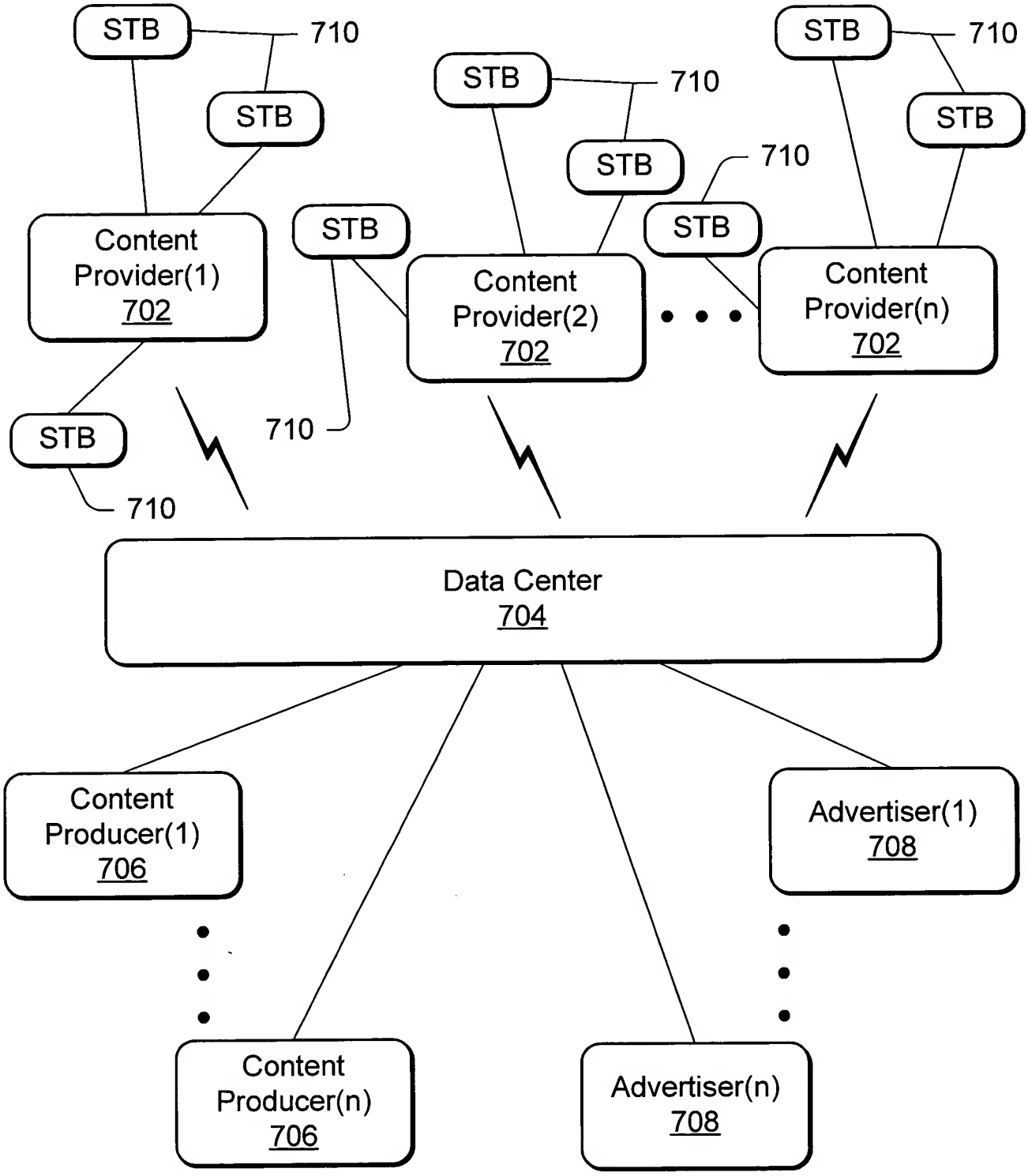

STB
710
STB
Content Provider(1) 702
STB
710
STB
710
STB
Content Provider(2) 702
STB
710
STB
Content Provider(n) 702
STB
710
Data Center 704
Content Producer(1) 706
Content Producer(n) 706
Advertiser(1) 708
Advertiser(n) 708
700

Fig. 7

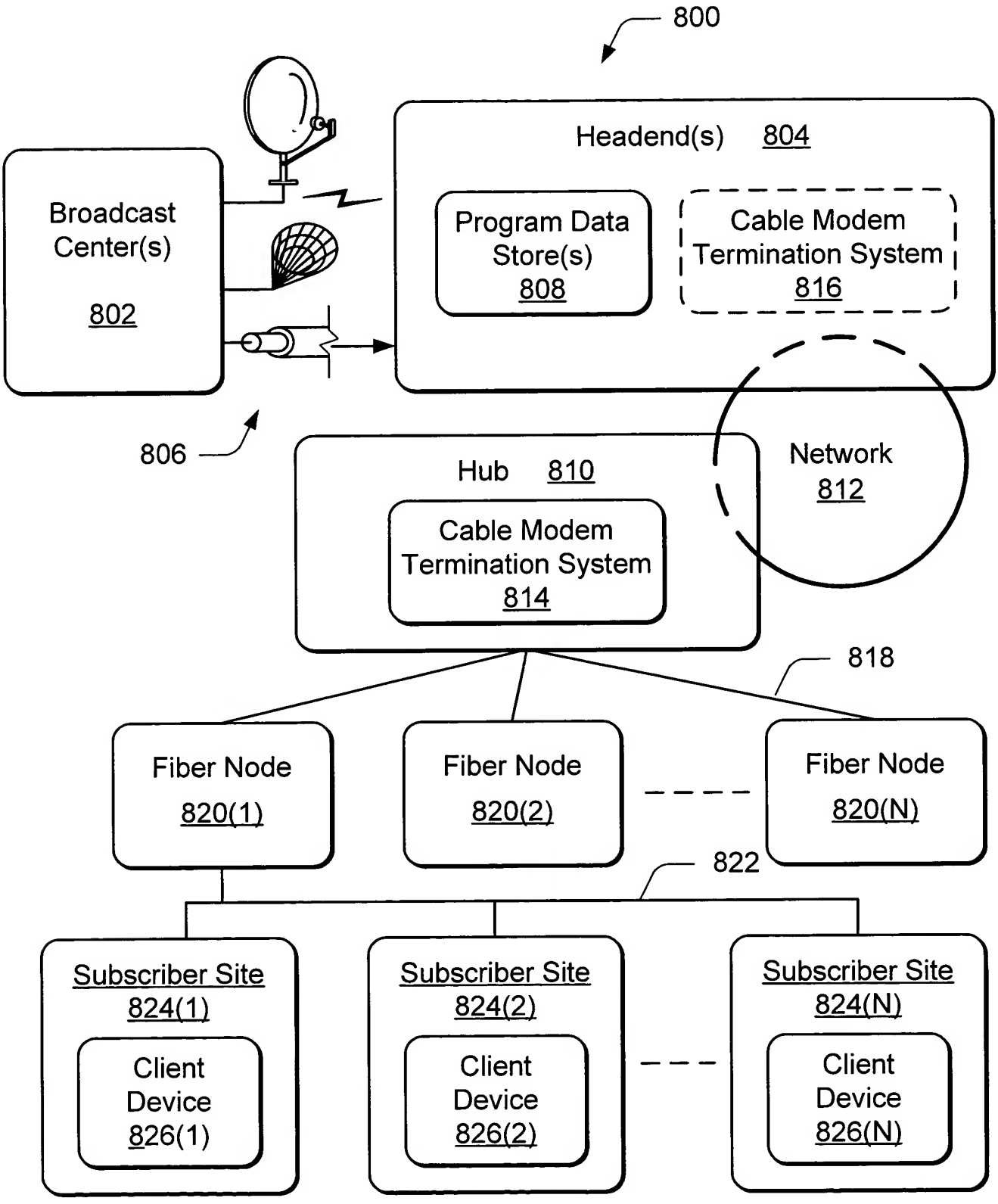

800
Broadcast Center(s) 802
Headend(s) 804
Program Data Store(s) 808
Cable Modem Termination System 816
806
Hub 810
Cable Modem Termination System 814
Network 812
818
Fiber Node 820(1)
Fiber Node 820(2)
Fiber Node 820(N)
822
Subscriber Site 824(1)
Client Device 826(1)
Subscriber Site 824(2)
Client Device 826(2)
Subscriber Site 824(N)
Client Device 826(N)

Fig. 8

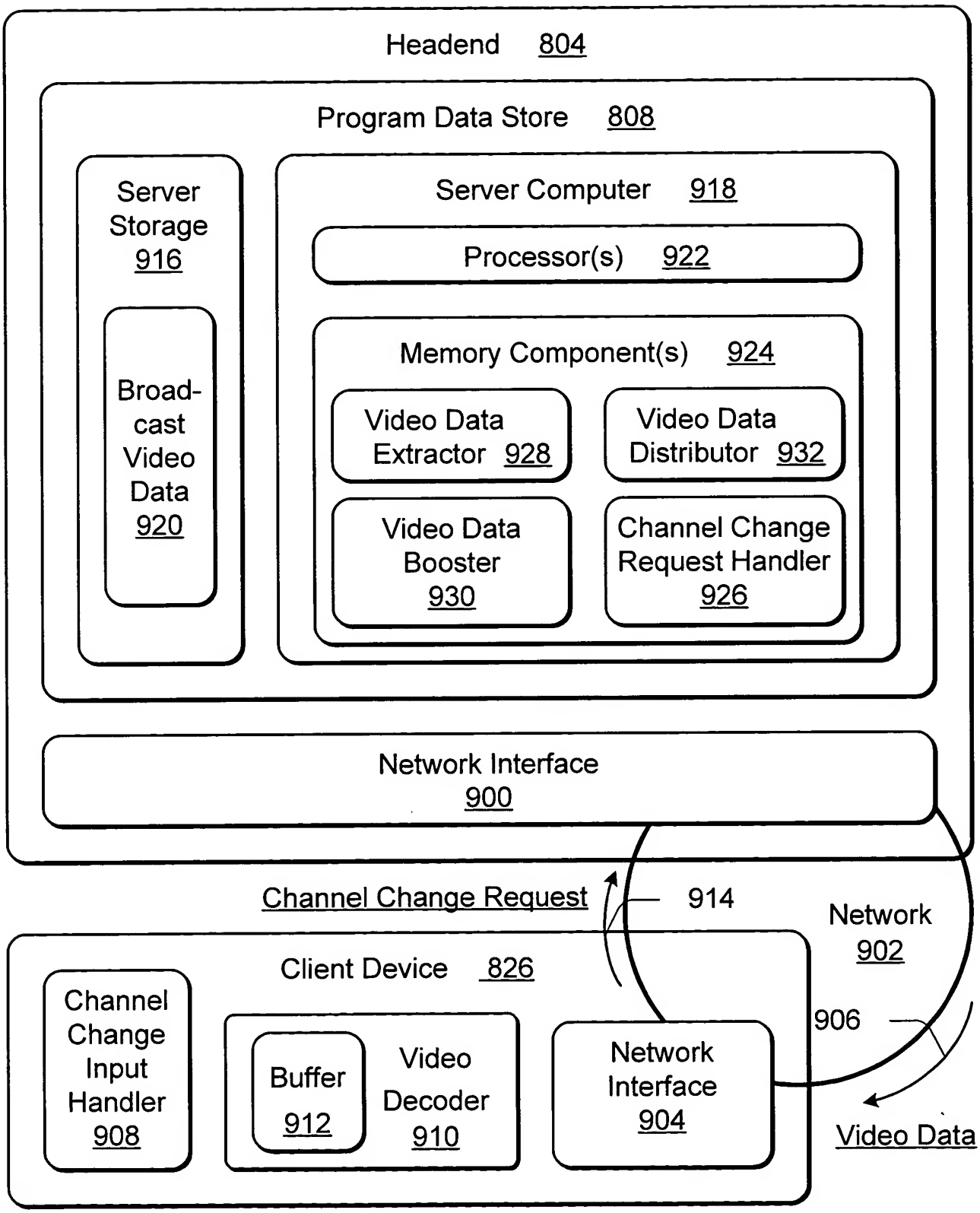

Headend 804
Program Data Store 808
Server Storage 916
Broad-cast Video Data 920
Server Computer 918
Processor(s) 922
Memory Component(s) 924
Video Data Extractor 928
Video Data Distributor 932
Video Data Booster 930
Channel Change Request Handler 926
Network Interface 900
Channel Change Request
914
Network 902
Client Device 826
Channel Change Input Handler 908
Buffer 912
Video Decoder 910
Network Interface 904
906
Video Data

Fig. 9